

TRANSMITTAL OF APPEAL BRIEF (Large Entity)

Docket No.
SHC0029-02

Invention of: Toshio KOBAYASHI et al.

Serial No.
09/220,223Filing Date
December 23, 1998Examiner
Elizabeth ColeGroup Art Unit
1771

Invention: NONWOVEN FABRIC AND METHOD OF MAKING THE SAME

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on

The fee for filing this Appeal Brief is: \$320.00

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- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
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Signature

Dated: May 28, 2003

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Signature of Person Mailing Correspondence

Michael S. Gzybowski

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Effective 01/01/2003. Patent fees are subject to annual revision.

☐ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$)

\$320.00

Complete if Known

Application Number	09/220,223
Filing Date	December 23, 1998
First Named Inventor	Toshio KOBAYASHI et al.
Examiner Name	Elizabeth Cole
Group Art Unit	1771
Attorney Docket No.	SHC0029-02

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☒ Deposit Account:

Deposit Account Number
12-2136

Deposit Account Name
BUTZEL LONG

The Commissioner is authorized to: (check all that apply)

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FEE CALCULATION

1. BASIC FILING FEE

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1001	2001	750	375	Utility filing fee	
1002	2002	330	165	Design filing	
1003	2003	520	260	Plant filing fee	
1004	2004	750	375	Reissue filing	
1005	2005	160	80	Provisional filing fee	
SUBTOTAL (1)					(\$)

2. EXTRA CLAIM FEES FOR UTILITY AND

Extra Claims	Fee from below	Fee Paid
Total Claims -20** = 0	X	= 0.00
Independent Claims -3** = 0	X	= 0.00
Multiple Dependent		

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description
1202	2202	18	9	Claims in excess of 20
1201	2201	84	42	Independent claims in excess of 3
1203	2203	280	140	Multiple dependent claim, if not paid
1204	2204	84	42	** Reissue independent claims over original patent
1205	2205	18	9	** Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$)

\$0.00

**or number previously paid, if greater; For Reissues, see above

FEE CALCULATION (continued)

3. ADDITIONAL FEES

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051	2051	130	65	Surcharge - late filing fee or oath	
1052	2052	50	25	Surcharge - late provisional filing fee or cover sheet	
1053	1053	130	130	Non - English specification	
1812	1812	2,520	2,520	For filing a request for ex parte reexamination	
1804	1804	920*	920*	Requesting publication of SIR prior to Examiner action	
1805	1805	1,840*	1,840*	Requesting publication of SIR after Examiner action	
1251	2251	110	55	Extension for reply within first month	
1252	2252	410	205	Extension for reply within second month	
1253	2253	930	465	Extension for reply within third month	
1254	2254	1,450	725	Extension for reply within fourth month	
1255	2255	1,970	985	Extension for reply within fifth month	
1401	2401	320	160	Notice of Appeal	
1402	2402	320	160	Filing a brief in support of an appeal	320.00
1403	2403	280	140	Request for oral hearing	
1451	1451	1,510	1,510	Petition to institute a public use proceeding	
1452	2452	110	55	Petition to revive - unavoidable	
1453	2453	1,300	650	Petition to revive - unintentional	
1501	2501	1,300	650	Utility issue fee (or reissue)	
1502	2502	470	235	Design issue fee	
1503	2503	630	315	Plant issue fee	
1460	1460	130	130	Petitions to the Commissioner	
1807	1807	50	50	Processing fee under 37 CFR § 1.17(q)	
1806	1806	180	180	Submission of Information Disclosure Statement	
8021	8021	40	40	Recording each patent assignment per property (times number of properties)	
1809	2809	750	375	Filing a submission after final rejection (37 CFR § 1.129(a))	
1810	2810	750	375	For each additional invention to be examined (37 CFR § 1.129(b))	
1801	2801	750	375	Request for Continued Examination (RCE)	
1802	1802	900	900	Request for expedited examination of a design application	

Other fee (specify)

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)

\$320.00

SUBMITTED BY

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Registration No. (Attorney/Agent)

32,816

Complete (if applicable)

Telephone

734-995-3110

Signature

Michael S. Gzybowski


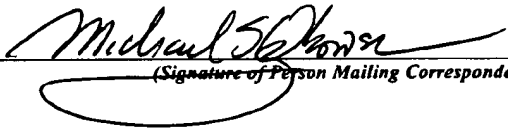
Date

May 28, 2003

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CERTIFICATE OF MAILING BY FIRST CLASS MAIL (37 CFR 1.8)			Docket No.
Applicant(s): Toshio KOBAYASHI et al.			SHC0029-02
Serial No. 09/220,223	Filing Date December 23, 1998	Examiner Elizabeth Cole	Group Art Unit 1771
Invention: NONWOVEN FABRIC AND METHOD OF MAKING THE SAME			
			
I hereby certify that this <u>Appeal Brief, Brief Transmittal and Fee Transmittal</u> (Identify type of correspondence) is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on <u>May 28, 2003</u> (Date)			
<div style="text-align: right;"><u>Michael S. Gzybowski</u> (Typed or Printed Name of Person Mailing Correspondence)  (Signature of Person Mailing Correspondence)</div>			
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PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Group
Art Unit: 1771

Attorney
Docket No.: SCH0029-02

Applicant: Toshio KOBAYASHI et al.

Invention: NONWOVEN FABRIC AND METHOD OF
MAKING THE SAME

Serial No: 09/220,223

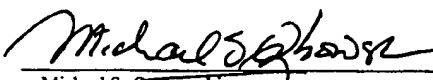
Filed: December 23, 1998

Examiner: Elizabeth Cole

Certificate Under 37 CFR 1.8(a)

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1450

on May 28, 2003


Michael S. Gzybowski

BRIEF ON APPEAL

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Further to Appellants' Notice of Appeal filed March 28, 2003 in connection with the above-
identified application, appellants submit the present Brief on Appeal.

REAL PARTY IN INTEREST

Appellant has assigned this application to Uni-Charm Corporation in an assignment which
was executed by the inventors on April 20 and 23, 2001, and filed in the United States Patent and

06/04/2003 AWONDAF1 00000129 122136 09220223

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Trademark Office on May 29, 2001, and recorded on June 1, 2001 at Reel No. 011857 and Frame No. 0626.

RELATED APPEALS AND INTERFERENCES

There are no related cases involved in any appeal procedures or Interferences.

STATUS OF CLAIMS

Claims 1-3 and 6-12 are pending in this application. Claims 1-3 and 6-12 stand under Final Rejection, from which rejection of claims 1-3 and 6-12 this appeal is taken. No other claims are pending.

STATUS OF AMENDMENTS

No Amendments After Final Rejection were filed in the application.

SUMMARY OF INVENTION

The present invention is directed to a nonwoven fabric and a method for making the nonwoven fabric. As discussed in the last paragraph on page 2 of appellants' specification, the nonwoven fabric has a sufficiently high formability to facilitate formation of embosses/debosses or

apertures when nonwoven fabric is intended to be used as material for kitchen papers (paper towels) or the like.

As disclosed in the first paragraph on page 3 of appellants' specification, the nonwoven fabric comprises synthetic microfibers that are: 5-30 mm long; have a fineness of about 0.1 to 0.8 d; are present in about 90 to 10% by weight; and mixed and mechanically entangled with pulp fibers that are about 2 to 7 mm long, present in about 10 to 90% by weight, so that the fabric has a basis weight of about 10 to 80 g/m² as a whole.

As depicted in Fig. 2 and discussed in the second paragraph on page 5 of appellants' specification, the nonwoven fabric (1A) includes a plurality of protuberances (51) when adapted to be used as a kitchen paper (paper towel). The protuberances 51 have heights that range from 0.2-5 mm and pitches that range from 1-10 mm.

The "high formability" mentioned above allows the fibers to be "slightly oriented so far as regions defined from bases toward crests of the respective protuberances are concerned, they are randomly distributed in regions defined between each pair of the adjacent protuberances 51." (See sentence bridging pages 5-6 of appellants' specification).

As can be determined from Fig. 2, the protuberances are not impressed into the thickness of the nonwoven fabric. Rather, the protuberances are formed so that the nonwoven fabric has a cross section in the form of undulations which continue in at least one direction of the nonwoven fabric.

As disclosed on page 7, lines 10-16 of appellants' specification, the protuberances can have conical or pyramidal shapes.

ISSUE

Whether claims 1-3 and 6-12 fail to meet the requirements of 35 U.S.C. §112, first paragraph.

Whether claims 1-3 and 6-12 are unpatentable over Anderson et al. in view of Radwanski et al. under 35 U.S.C. §103(a).

GROUPING OF CLAIMS

Claims 1-3 and 6-12 stands collectively rejected under 35 U.S.C. §112, first paragraph and therefore stand or fall together under this rejection.

Claims 1-3 and 6-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. in view of Radwanski et al. and therefore stand or fall together under this rejection.

THE REFERENCES

The following references are relied upon by the examiner:

U.S. 4,100,324
U.S. 4,879,170

Anderson et al.
Radwanski et al.

Jul. 11, 1978
Nov. 7, 1989

BRIEF DESCRIPTION OF THE REFERENCES

Anderson et al. discloses a nonwoven fabric that is basically an air-formed matrix of thermoplastic polymer microfibers having an average fiber diameter of less than about 10 microns, and a multiplicity of individualized wood pulp fibers deposited throughout the matrix of microfibers.

The nonwoven fabric is formed by providing a primary air stream containing melt blown microfibers, providing a secondary air stream containing wood pulp fibers, merging the primary and secondary air streams together under turbulent conditions to form an integrated air stream containing thorough mixture of the components, and then directing the integrated air stream onto a forming surface to air-form the nonwoven fabric.

Anderson et al. teaches that the strength of the resulting web can be improved by embossing the web either ultrasonically or at an elevated temperature so that the thermoplastic microfibers are flattened into a film-like structure in the embossed "bonded" areas.

Radwanski et al. discloses a "nonwoven fibrous hydraulically entangled *elastic* coform material" In Radwanski et al. melt blown fibers and a fibrous material are coformed (with at least one of the melt blown fibers and fibrous material being elastic) and subject to hydraulic entanglement.

During the hydraulic entanglement the coform is supported on a mesh screen, forming wires, or apertured plates and subjected to streams of water from jet devices.

THE REJECTIONS

Claim 1-3 and 6-12 stand rejected under 35 U.S.C. §112, first paragraph as containing subject matter that was not described in the specification in such a way as to “reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.”

Under this rejection the examiner has taken the position that the specification as originally filed “does not state that ‘said thermoplastic synthetic fibers being non-fused throughout said fabric.’”

Claims 1-3 and 6-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. in view of Radwanski et al.

Under this rejection the examiner has relied upon Anderson et al. as disclosing a nonwoven fabric comprising meltblown microfibers and a pulp material. The examiner has further relied upon Anderson et al. as teaching that the microfibers have a diameter of 2-6 microns and a length of about the same as or greater than a staple fiber. The examiner has further relied upon Anderson et al. as teaching that pulp material may have a length of 0.5 - 10 mm, and that the pulp fibers and microfibers may be present in appellants’ claimed proportions, with the nonwoven having a basis weight within appellants’ claimed range.

The examiner concedes that:

Anderson differs from the claimed invention because Anderson forms the embossed areas via heat bonding which may reduce the absorbency of the fabric at least at the embossed areas.

The examiner has relied upon Radwanski et al. as teaching that:

...nonwoven fabrics may be hydroentangled on a mesh screen, forming wire or apertured plate in order to form embossments or protuberances with out changing the properties such as absorbency, etc, of the fabric.

In combining the teachings of Anderson et al. and Radwanski et al. the examiner takes the position that:

...it would have been obvious at the time the invention was made to have formed the embossed pattern by hydroentangling the fabric.

The examiner stated that:

One of ordinary skill in the art would have been motivated to employ hydroentangling and a forming fabric rather than a heat embossing process in order to maintain the absorbency of the fabric even in the patterned areas.

ARGUMENT

Rejection of the Claims Under 35 U.S.C. §112, First Paragraph

Claims 1-3 and 6-12 stand rejected under 35 U.S.C. §112, first paragraph as claiming subject matter that was not described in the specification in such a way so to reasonably convey to one skilled in the relevant art that the inventor(s), at the time that the application was filed, had possession of the claimed invention.

Specifically the examiner states that the specification as originally filed does not state that "said thermoplastic synthetic fibers being non-fused throughout said fabric."

The examiner cites *Ex parte Grasselli*, 231 USPQ 393 (Bd. App 1983), aff'd mem., 738 F.2b 453 (Fed. Cir, 1984) as holding that the mere absence of a positive recitation is not basis for an exclusion.

The examiner states that “[a]ny claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.”

In *Ex Parte Grasselli* the Board of Appeals point out that:

The examiner has not explained the basis of the rejection for lack of enablement and we find none independently. (231 USPQ 393, at 394)

The Board of Appeals in *Ex Parte Grasselli* did however state that:

We shall affirm the rejection based on lack of description in the specification as filed. (231 USPQ 393, at 394)

Ex parte Grasselli is inconclusive because there are not enough facts reported therein to determine if the holding therein is applicable to the present situation or any particular situation.

The first paragraph of 35 U.S.C. §112 states:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention.

In *Ex parte Grasselli*, the Board of Appeals cites *In re Anderson*, 176 USPQ 331 (CCPA 1973).

In *Anderson* the CCPA indicated that “Appellant is clearly entitled to have the whole of his disclosure considered” when determining if the claims are supported by the specification.

In the present situation it is submitted that appellants’ disclosure fully supports the claimed recitation that the thermoplastic synthetic fibers are “non-fused throughout said fabric.” Moreover,

appellants' disclosure provides enablement for one skilled in the art to "make and use" a fabric comprising thermoplastic synthetic fibers that are "non-fused throughout said fabric."

Beginning on page 1, lines 1-4 of appellants' specification, appellants introduce their invention as relating to "nonwoven fabrics well adapting itself to embossing."

With this introduction, appellants next describe the prior art as "not necessarily [being] easy to form irregularities thereon by embossing....because the synthetic fiber has relatively high rigidity and elasticity." (page 1, lines 10-13). It is readily understood that the "embossing" referred to at this portion of the disclosure does not involve heating, melting and fusing the fibers, because in such a case the irregularities would readily be formed and maintain their shapes if the fibers were heated, melted, fused. Thus, one skilled in the art would recognize that this portion of the specification which forms the basis of introducing appellants' claimed invention refers to embossing techniques that do not fuse the fibers together.

In the paragraph bridging pages 2 and 3 it is noted that attempts to emboss a fibrous web to form apertures of 5 mm or less, "the individual fibers can not be smoothly rearranged around each of the projection provided on the embossing machine." (see page 2, lines 2-4). From this passage it becomes even more clear to those skilled in the art that appellants' disclosure relates to embossing techniques that "rearrange" fibers about "projections provided on an embossing machine" rather than embossing processes that heat, melt and fuse the fibers.

Further at page 2, lines 11-14 and 15-21 it is stated that appellants' invention provides a nonwoven fabric having "a sufficiently high formability to facilitate formation of embosses/debosses of apertures." The statement of the invention has to be read in the context of the above reference to

the fibers being rearranged (as opposed to being heated, melted and fused) during the embossing process.

On page 5, line 19 through page 6, line 1 appellants disclose how their fibers are “slightly oriented” and “randomly distributed” around portions of the protuberances. This disclosure is commensurate with the prior reference to an embossing technique in which the fibers are rearranged around the projections of an embossing machine.

Note, at page 5, lines 9-10, appellants state that no binding agents are used, which could tend to inhibit the movement (rearrangement or orientation) of the fibers during embossing.

Appellants’ process of making the nonwoven fabric is set forth on pages 3-4 as including the steps of:

- a. obtaining a wet sheet from slurry of a fibrous mixture comprising thermoplastic synthetic fibers and pulp fibers; and
- b. placing the wet sheet on a support and then subjecting the wet sheet to high velocity water jet streams for mechanically entangling the fibrous mixture.

The disclosed process would necessarily result in a fabric comprising thermoplastic synthetic fibers that are “non-fused throughout said fabric.”

Following the formation of the nonwoven fabric, the fabric is subjected to an embossing process that orients and distributes (i.e. moves) the fibers.

It is submitted that a careful, overall review of appellants’ specification makes it clear to those skilled in the art, that appellants’ technique of forming protuberances in the nonwoven fabric does not result in the fibers being fused, i.e., the fibers are non-fused.

The disclosure requirements of 35 U.S.C. §112, first paragraph requires an applicant to provide a written description of what he or she considers to be his or her invention. There is no requirement that an applicant include a description of what is not his or her invention. Accordingly, in the present situation, appellants are not required to explicitly state that their fibers are not fused.

As held in *In re Anderson (supra)*:

In determining whether an amendment to a claim constituted new matter, the question is not whether the added word was a word used in the specification as filed, but whether there is support in the specification for employment of the word in the claim, i.e., whether the concept is present in the specification.

In the present situation, for the reasons set forth above, it is submitted that appellants' specification fully supports the recitation that the fibers are non-fused.

Accordingly, the Board is requested to reconsider and reverse the outstanding rejection of the claims under 35 U.S.C. §112, first paragraph.

The examiner has stated that "[a]ny claim containing a negative limitation which does not have basis in the original disclosure should be rejected under 35 U.S.C. §112, first paragraph as failing to comply with the written description requirement.

For the reasons set forth above, it is respectfully submitted that the original disclosure does in fact "have basis" to support that the fibers are non-fused, when properly considering the specification in accordance with *In re Anderson (supra)*.

Rejection of the Claims Under 35 U.S.C. §103(a)

Claims 1-3 and 6-12 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Anderson et al. in view of Radwanski et al.

Under this rejection the examiner has relied upon Anderson et al. as disclosing a nonwoven fabric comprising meltblown microfibers and a pulp material. The examiner has further relied upon Anderson et al. as teaching that the microfibers have a diameter of 2-6 microns and a length of about the same as or greater than a staple fiber. The examiner has further relied upon Anderson et al. as teaching that pulp material may have a length of 0.5 - 10 mm, and that the pulp fibers and microfibers may be present in appellants' claimed proportions, with the nonwoven having a basis weight within appellants' claimed range.

The examiner concedes that:

Anderson differs from the claimed invention because Anderson forms the embossed areas via heat bonding which may reduce the absorbency of the fabric at least at the embossed areas.

The examiner has relied upon Radwanski et al. as teaching that:

...nonwoven fabrics may be hydroentangled on a mesh screen, forming wire or apertured plate in order to form embossments or protuberances with out changing the properties such as absorbency, etc, of the fabric.

In combining the teachings of Anderson et al. and Radwanski et al. the examiner takes the position that:

...it would have been obvious at the time the invention was made to have formed the embossed pattern by hydroentangling the fabric.

The examiner stated that:

One of ordinary skill in the art would have been motivated to employ hydroentangling and a forming fabric rather than a heat embossing process in order to maintain the absorbency of the fabric even in the patterned areas.

Anderson et al. expressly relies upon embossing the composite web in order to improve the strength thereof as discussed at column 6, lines 46-51.

The embossing process can be performed at “either ultrasonically or at an elevated temperature” and results in the formation of a flattened “film-like structure in the embossed areas” which is identified as “bonded” areas 43 in Fig. 4

As claimed, appellants’ invention provides a nonwoven fabric that contains thermoplastic synthetic fibers, which fibers are non-fused throughout the nonwoven fabric.

Moreover, it is submitted that the appellants’ claimed nonwoven fabric is distinguishable over Anderson et al. in that appellants’ nonwoven fabric sheet has uniform water absorbability throughout. In contrast, it is understood that the bonded areas 43 of Anderson et al. would necessarily have lower water absorbability than the surrounding non-bonded areas. Water absorbability is an important property in articles such as paper towels that can be made from the nonwoven fabric of the present invention.

The examiner concedes that:

Anderson differs from the claimed invention because Anderson forms the embossed areas via heat bonding which may reduce the absorbency of the fabric at least at the embossed areas.

The examiner has accordingly relied upon Radwanski et al. as teaching that:

...nonwoven fabrics may be hydroentangled on a mesh screen, forming wire or apertured plate in order to form embossments or protuberances with out changing the properties such as absorbency, etc, of the fabric.

As held by the CCPA in *In re Wesslau*:

It is impermissible within the framework of Section 103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of

other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. *In re Wesslau*, 147 USPQ 391, at 393 (CCPA 1965).

The examiner's rejection of appellants' claims 1-3 and 6-12 is based upon the position that it would have been obvious under 35 U.S.C. §103 to modify Anderson to "form the embossing pattern by hydroentangling the fiber" in order to apparently avoid the formation of flattened film-like bonded areas of Anderson et al and thereby "form embossments or protuberances without changing the properties such as absorbency, etc., of the fabric."

This basis for supporting the combination of Anderson et al. and Radwanski et al. and the rejection of appellants' claims is completely unfounded and clearly in error.

Anderson et al. expressly relies upon the embossing to strengthen the composite web. The embossing utilized by Anderson et al. produces flattened film-like areas that are bonded by the application of elevated temperatures and pressure. It is submitted that the structure of the embossed flattened film-like bonded areas, in addition to the embossment pattern, contributes to the strength required by Anderson et al.

The examiner has relied upon Radwanski et al. as teaching that:

...nonwoven fabrics may be hydroentangled on a mesh screen, forming wire or apertured plate in order to form embossments or protuberances without changing the properties such as absorbency, etc., of the fabric.

The examiner further states that:

...Radwanski teaches that smooth or pattern surfaces can be formed depending on the type of support which is used. Therefore, Radwanski teaches forming embossment or protuberances because Radwanski teaches that either a smooth or patterned surface can be formed.

Radwanski et al does not teach that hydroentangling fibers using a support surface will result in the embossed strengthening structure taught and required by Anderson et al., i.e., flattened film-like bonded areas.

It is rather submitted that if Anderson et al. were modified as the examiner suggests and the embossed, flattened film-like bonded areas were eliminated, the effect would severely reduce the strength that Anderson et al. teaches that the embossed, flattened film-like bonded areas specifically provide for.

Such a modification would in effect eliminate the structural strengthening required by Anderson et al. and thereby destroy the teachings of Anderson et al.

Such a modification is clearly improper under the holding in *Ex parte Hartmann*:

References cannot properly be combined if effect would destroy invention on which one of reference patents is based. *Ex parte Hartmann*, 186 USPQ 366 (PTO Bd App 1974)

In *In re Laskowski* the Federal Circuit held:

The mere fact that the prior art could be so modified would not have made the modification obvious unless the prior art suggested the desirability of the modification. *In re Laskowski*, 10 USPQ 2d 1397(Fed. Cir. 1989).

It the present situation it is submitted that, absent improper hindsight reliance upon appellants' own disclosure, a fair reading of the prior art does not suggest the modification which the examiner purports to be obvious. There is no benefit or desirability found within the teachings of Anderson et al. and Radwanski et al. that provides the necessary motivation for the proposed modification.

If anything, as discussed above, Anderson et al. teaches against the proposed modification.

CONCLUSION

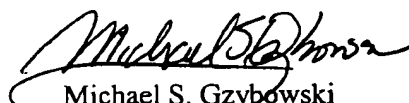
For the reasons advanced above, appellants respectfully contend that the rejection of claims - 3 and 6-12 as failing to meet the requirements of 35 U.S.C. §112, first paragraph is unfounded because appellants' specification, when fully considered, supports the recitation that the fibers are non-fused, and provides an enabling disclosure for fibers are non-fused.

Moreover, for the reasons advanced above, appellants respectfully contend that the rejection of claims 1-3 and 6-12 as being obvious under 35 U.S.C. §103(a) over Anderson et al. in view of Radwanski et al. is improper because the examiner has not met the necessary burden of establishing a *prima facie* case of obviousness.

Reversal of each of the rejections on appeal is respectfully requested.

To the extent necessary, a petition for an extension of time under 37 CFR §1.136 is hereby made. Please charge the fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 12-2136 and please credit any excess fees to such deposit account.

Respectfully submitted,


Michael S. Gzybowski
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CLAIMS ON APPEAL

1. (Three Times Amended) A nonwoven fabric containing thermoplastic microfibers, said nonwoven fabric comprising:

thermoplastic synthetic fibers being about 5 to about 30 mm long and as fine as about 0.1 to 0.8 d, in about 90 to 10% by weight, mixed and mechanically entangled with pulp fibers being about 2 to 7 mm long, in about 10 to 90% by weight, so as to have a basis weight of about 10 to 80 g/m² as a whole,

said fabric being in the form of a sheet having a plurality of protuberances that project from a surface of the sheet and said thermoplastic synthetic fibers being non-fused throughout said fabric.

2. (Amended) A nonwoven fabric according to claim 1, wherein said thermoplastic synthetic fibers comprise melt blown fibers.

3. (Amended) A nonwoven fabric according to claim 1, wherein said nonwoven fabric comprises a paper towel.

6. A nonwoven fabric according to claim 1, wherein the plurality of protuberances have heights of about 0.2 to 5 mm and pitches of about 1 to 10 mm in lateral and transverse directions of the sheet.

7. A nonwoven fabric according to claim 1, wherein the plurality of protuberances have conical shapes.

8. A nonwoven fabric according to claim 1, wherein the plurality of protuberances have pyramidal shapes.

9. (Twice Amended) A nonwoven fabric containing thermoplastic microfibers, said nonwoven fabric comprising:

thermoplastic synthetic fibers being about 5 to about 30 mm long and having a fineness of about 01 to 0.8 d, in about 90 to 10% by weight, mixed and mechanically entangled with pulp fibers being about 2 to 7 mm long, in about 10 to 90% by weight, so as to have a basis weight of about 10 to 80 g/m² as a whole,

said fabric being in the form of a sheet having a plurality of protuberances that project from a surface of the sheet, said protuberances having curved peaks, and said thermoplastic synthetic fibers being non-fused throughout said fabric.

10. A nonwoven fabric according to claim 1, wherein each of the protuberances has a base continuous with the surface of the sheet, a peak and a diameter that gradually decreases from the base toward the peak.

11. A nonwoven fabric according to claim 1, wherein a water absorbability of the plurality of protuberances is substantially equal to a water absorbability of areas between the plurality of protuberances.

12. A nonwoven fabric according to claim 1, wherein the nonwoven fabric has a cross section in the form of undulations which continue in at least one direction of the nonwoven fabric.